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(12) **United States Patent**
Asaki et al.(10) **Patent No.:** **US 7,205,302 B2**(45) **Date of Patent:** **Apr. 17, 2007**(54) **HETEROCYCLIC COMPOUND
DERIVATIVES AND MEDICINES**(75) Inventors: **Tetsuo Asaki**, Kyoto (JP); **Taisuke
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patent is extended or adjusted under 35
U.S.C. 154(b) by 344 days.(21) Appl. No.: **10/476,196**(22) PCT Filed: **Apr. 25, 2002**(86) PCT No.: **PCT/JP02/04118**§ 371 (c)(1),
(2), (4) Date: **Oct. 23, 2003**(87) PCT Pub. No.: **WO02/088084**PCT Pub. Date: **Nov. 7, 2002**(65) **Prior Publication Data**

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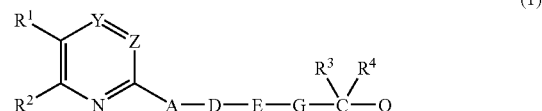
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A61K 31/4488 (2006.01)(52) **U.S. Cl.** **514/252.1**; 544/336; 544/408;
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546/300; 546/301(58) **Field of Classification Search** 544/336,
544/408; 514/252.1
See application file for complete search history.(56) **References Cited**

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4-triazine and its congeners, Boll. Chim. Farm., 1995, vol. 134, No.
1, pp. 9 to 15; compounds on formulas IV, V of Fig. 1.*Primary Examiner*—Venkataraman Balasubramanian(74) *Attorney, Agent, or Firm*—Darby & Darby(57) **ABSTRACT**The present invention provides a compound which is useful
as a PGI₂ receptor agonist, and a pharmaceutical composition.The present invention is directed to a pharmaceutical com-
position comprising a compound represented by the follow-
ing formula [1]:(R¹ and R² are the same or different and each represents
optionally substituted aryl, Y represents N or CH, Z repre-
sents N or CH, A represents NH, NR⁵, O, S, or ethylene, R⁵
represents alkyl, D represents alkylene or alkenylene, E
represents phenylene or single bond, G represents O, S, or
CH₂, R³ and R⁴ are the same or different and each represents
hydrogen or alkyl, Q represents carboxy, alkoxycarbonyl,
tetrazolyl, carbamoyl, or N-(alkylsulfonyl)carbamoyl, or a
pharmaceutically acceptable salt thereof as an active ingre-
dient.**15 Claims, No Drawings**